

Proposed Amendment

Application Serial Number: 10/645,983
1.116 Amendment dated December 16, 2005
Reply to Office Action dated August 8, 2005

Docket Number: 43744-183259

AMENDMENTS TO THE CLAIMS

Please **REWRITE** claims 1, 4, 5, 8, 12, 13, 14, 16, 20, 22, 23, 25 and 27. For the Examiner's convenience, this Amendment includes the text of all claims under examination, a parenthetical expression for each claim to indicate the current status of the claim, and markings to show the changes to a claim relative to the immediate prior version of that claim.

1. (Currently Amended) A muzzle stabilizer for a rapid-fire repeating firearm comprising:
a tubular body comprising two or more gas vents, wherein a first gas vent, nearest to a first end of the tubular body, comprises a plurality of openings radially arranged about the tubular body with each opening having ~~[[has]]~~ an angle that is perpendicular to a longitudinal axis of the tubular body, and a second gas vent, nearest to a second end of the tubular body, having ~~[[has]]~~ an angle that is non-parallel to the angle of the first gas vent;
an attachment flange connected to the second ~~[[first]]~~ end of the tubular body, the attachment flange having a coupler adapted to mate with a corresponding coupler on the end of the muzzle of the firearm;
a gas regulator threadedly engaged with the first ~~[[second]]~~ end of the tubular body such that rotation of the gas regulator adjusts the venting of gas through at least one of the two or more gas vents, the threaded engagement of the gas regulator and tubular body comprising a thread pattern of 24 or more threads per inch.
2. (Original) The muzzle stabilizer of claim 1 further comprising a multistage expansion chamber.
3. (Original) The muzzle stabilizer of claim 2 wherein the tubular body and attachment

Proposed Amendment

1.116 Amendment – Page 2 of 23

Proposed Amendment

Application Serial Number: 10/645,983
1.116 Amendment dated December 16, 2005
Reply to Office Action dated August 8, 2005

Docket Number: 43744-183259

flange have different internal diameters, the internal diameter of the attachment flange defining a first expansion chamber stage and the internal diameter of the tubular body defining a second expansion chamber stage.

4. (Currently Amended) The muzzle stabilizer of claim 1 wherein the plurality of openings of the first gas vent ~~the gas vents comprise a plurality of ninety-degree vents, the sizes of the ninety-degree vents being graduated sizes.~~ the first gas vent comprises

5. (Currently Amended) The muzzle stabilizer of claim 4 wherein the second gas vent gas vents further comprises ~~comprise~~ a thirty-degree vent, wherein a decrease in gas venting through the ninety-degree vents corresponds with an increase in venting through the thirty-degree vent.

6. (Original) The muzzle stabilizer of claim 1 further comprising a spring indent biased into the interior of the tubular body, wherein the gas regulator comprises six or more circumferentially arranged index grooves for incrementally engaging the spring indent.

7. (Original) The muzzle stabilizer of claim 6 wherein the threaded engagement of the gas regulator and tubular body comprises a thread pattern of 28 or more threads per inch.

8. (Currently Amended) A muzzle stabilizer adapted to be attached to the end of a rapid-fire repeating firearm muzzle, the muzzle stabilizer comprising:

a tubular body having an inner diameter and a plurality of gas vents, wherein a first gas vent, nearest a first end of the tubular body, comprises a plurality of openings radially arranged about the tubular body with each opening having ~~comprises~~ an angle that is perpendicular to a longitudinal axis of the tubular body, and a second gas vent, nearest a second end of the tubular body, having ~~comprises~~ an angle that is non-parallel to the angle of the first gas vent;

Proposed Amendment

1.116 Amendment – Page 3 of 23

Proposed Amendment

Application Serial Number: 10/645,983
1.116 Amendment dated December 16, 2005
Reply to Office Action dated August 8, 2005

Docket Number: 43744-183259

an attachment flange connected to the second [[first]] end of the tubular body, the attachment flange having a coupler corresponding with a coupler on the end of the muzzle and an inner diameter different from that of the tubular body;

the inner diameter of the attachment flange defining a first expansion chamber stage and the inner diameter of the tubular body defining a second expansion chamber stage, wherein gas produced during discharge of a projectile will expand as it travels from the muzzle through the first and second stages; and

a gas regulator adjustably engaged with the first [[second]] end of the tubular body for regulating the venting of gas through at least one of the gas vents.

9. (Original) The muzzle stabilizer of claim 8 wherein the attachment flange is detachable from the tubular body.
10. (Original) The muzzle stabilizer of claim 8 wherein the attachment flange is formed of unitary construction with the tubular body.
11. (Original) The muzzle stabilizer of claim 8 wherein the inner diameter of the tubular body is more than ten percent greater than the inner diameter of the attachment flange.
12. (Currently Amended) The muzzle stabilizer of claim 8 wherein the plurality of openings of the first gas vent have ~~the gas vents comprise a plurality of openings of graduated sizes radially arranged about the tubular body.~~
13. (Currently Amended) The muzzle stabilizer of claim 8 wherein the gas regulator is threadedly engaged with the first [[a second]] end of the tubular body with a thread pattern of greater than 24 threads per inch.
14. (Currently Amended) A muzzle stabilizer adapted to be attached to the end of a rapid-fire

Proposed Amendment

1.116 Amendment – Page 4 of 23

Proposed Amendment

Application Serial Number: 10/645,983
1.116 Amendment dated December 16, 2005
Reply to Office Action dated August 8, 2005

Docket Number: 43744-183259

repeating firearm muzzle, the muzzle stabilizer comprising:

a tubular body comprising gas vents of graduated sizes radially arranged about the tubular body and at least one slot gas vent, wherein ~~at least one of~~ the gas vents of graduated sizes are nearest to a first end of the tubular body and have ~~[[has]]~~ an angle that is perpendicular to a longitudinal axis of the tubular body, and ~~at least one of~~ said at least one slot gas vent is nearest to a second end of the tubular body and has an angle that is non-parallel to the angle of the gas vents of graduated sizes ~~each gas vent~~;

an attachment flange at the second ~~[[first]]~~ end of the tubular body, the attachment flange having a coupler adapted to mate with a corresponding coupler on the end of the muzzle;

a gas regulator threadedly engaged with the first ~~[[second]]~~ end of the tubular body such that rotation of the gas regulator adjusts the venting of gas through at least one of the gas vents of graduated sizes and said at least one slot gas vent.

15. (Original) The muzzle stabilizer of claim 14 wherein the radially arranged gas vents are disposed at an angle of ninety degrees with respect to the longitudinal axis of the tubular body.

16. (Currently Amended) The muzzle stabilizer of claim 15 wherein the angle of said at least one slot ~~tubular body further comprises a gas vent is disposed at an angle of~~ thirty degrees with respect to the longitudinal axis of the tubular body.

17. (Original) The muzzle stabilizer of claim 14 wherein the attachment flange is removably attached to the tubular body.

18. (Previously Presented) The muzzle stabilizer of claim 14 wherein the tubular body and the attachment flange have different internal diameters, the internal diameter of the

Proposed Amendment

1.116 Amendment – Page 5 of 23

Proposed Amendment

Application Serial Number: 10/645,983
1.116 Amendment dated December 16, 2005
Reply to Office Action dated August 8, 2005

Docket Number: 43744-183259

attachment flange defining a first expansion chamber stage and the internal diameter of the tubular body defining a second expansion chamber stage.

19.

(Original) The muzzle stabilizer of claim 14 further comprising a multistage expansion chamber.

20. (Currently Amended) A muzzle stabilizer kit comprising:

a muzzle stabilizer for a rapid-fire repeating firearm, the muzzle stabilizer comprising

a tubular body comprising two or more gas vents, wherein a first gas vent, nearest to a first end of the tubular body, comprises a plurality of openings radially arranged about the tubular body with each opening having ~~[[has]]~~ an angle that is perpendicular to a longitudinal axis of the tubular body, and a second gas vent, nearest to a second end of the tubular body, having ~~[[has]]~~ an angle that is non-parallel to the angle of the first gas vent,

an attachment flange connected to the second ~~[[first]]~~ end of the tubular body, the attachment flange having an adjustment surface and a coupler adapted to mate with a corresponding coupler on the end of the muzzle of the firearm, and

a gas regulator threadedly engaged with the first ~~[[second]]~~ end of the tubular body, the gas regulator having a driving surface for effecting rotation of the gas regulator relative to the tubular body, said rotation adjusting the venting of gas through at least one of the two or more gas vents; and

an adjusting tool comprising a rotational adjustment surface adapted to engage the adjustment surface of the attachment flange and a gas regulator adjusting surface adapted to engage the driving surface of the gas regulator.

Proposed Amendment

1.116 Amendment – Page 6 of 23

Proposed Amendment

Application Serial Number: 10/645,983

Docket Number: 43744-183259

1.116 Amendment dated December 16, 2005

Reply to Office Action dated August 8, 2005

21. (Original) The kit of claim 20 wherein the muzzle stabilizer further comprises a multistage expansion chamber.
22. (Currently Amended) The kit of claim 20 wherein the plurality of openings of the first gas vent have the gas vents comprise a plurality of vents of graduated sizes radially arranged about the tubular body.
23. (Currently Amended) The kit of claim 22 wherein the radially arranged openings gas vents are disposed at a ninety degree angle from the longitudinal axis of the tubular body and the second tubular body further comprises a gas vent is disposed at a thrity-degree angle thirty-degrees from the longitudinal axis.
24. (Original) The kit of claim 20 wherein the attachment flange is removably attached to the tubular body.
25. (Currently Amended) A muzzle stabilizer adapted to be attached to the end of a rapid-fire repeating firearm muzzle, the muzzle stabilizer comprising:
a tubular body;
an attachment flange at a second ~~[[first]]~~ end of the tubular body having a coupler adapted to attach to the end of the muzzle;
a gas regulator at a first ~~[[second]]~~ end of the tubular body;
two or more gas vents disposed at different angles through the tubular body proximate the gas regulator, wherein a first gas vent, nearest to the first end of the tubular body [comprises a plurality of openings radially arranged about the tubular body with each opening having] ~~[[has]]~~ an angle that is perpendicular to a longitudinal axis of the tubular body, and a second gas vent, nearest to the second end of the tubular body, having ~~[[has]]~~ an angle that is non-parallel to the

Proposed Amendment

1.116 Amendment – Page 7 of 23

Proposed Amendment

Application Serial Number: 10/645,983
1.116 Amendment dated December 16, 2005
Reply to Office Action dated August 8, 2005

Docket Number: 43744-183259

angle of the first gas vent;

a multistage expansion chamber having stages that increase in diameter from the attachment flange to the gas regulator, in which gas produced during discharge of a projectile will continuously expand as it passes from the muzzle through the stages of the expansion chamber; and

means for adjusting the gas regulator to regulate the venting of gas through at least one of the two or more gas vents.

26. (Previously Presented) The muzzle stabilizer of claim 1, wherein the angle of the second gas vent is oblique relative to the longitudinal axis of the tubular body.
27. (Currently Amended) The muzzle stabilizer of claim 26, wherein the angle of the second gas vent is an obtuse angle relative to the second [[first]] end of the tubular body.
28. (Previously Presented) The muzzle stabilizer of claim 1, wherein said two or more gas vents are located on an upper portion of the tubular body relative to the longitudinal axis of tubular body.
29. (Previously Presented) The muzzle stabilizer of claim 1, wherein the second gas vent is a slot vent.
30. (Previously Presented) The muzzle stabilizer of claim 29, wherein the slot vent is an arcuate slot vent.

Proposed Amendment

1.116 Amendment – Page 8 of 23